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TUBERCULOSIS.

INSTRUCTIONS AND SUGGESTIONS

—ISSUED UNDER AUTHORITY OF THE—

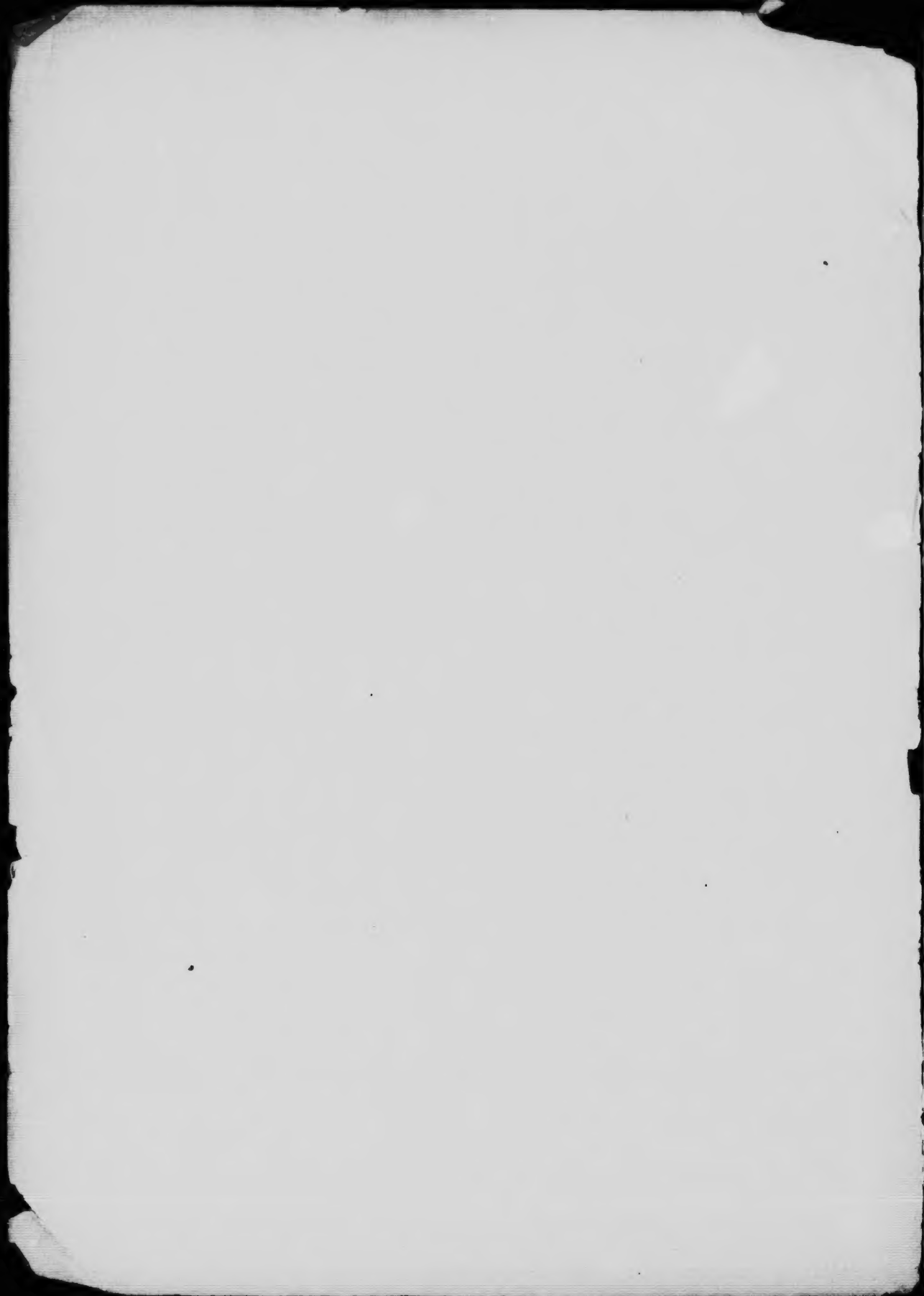
PROVINCIAL BOARD OF HEALTH

—OF—

BRITISH COLUMBIA.



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1901.





TUBERCULOSIS.

That insidious disease which we call consumption, phthisis or tuberculosis of the lungs, is the most terrible destroyer of lives with which civilisation has to contend. Within the last few years science has shown the nature of the disease and has clearly demonstrated its cause, how it flourishes and spreads, how it declines and disappears. It seems to me then, the time has now arrived when it becomes the duty of all sanitary authorities to assume a more aggressive attitude. It was this feeling that influenced me to put forward the Regulations lately adopted by this Board for the prevention of the spread of tuberculosis.

It may not be amiss, in order to bring out more forcibly the immediate necessity of adopting these Regulations, to recount some of the known and now generally-accepted facts regarding the nature of this disease. The disease known as tuberculosis may attack any organ or tissue in the body. When it affects the lungs it is called pulmonary tuberculosis, or consumption. In this form it causes about one-sixth of all the deaths occurring in the human race, and omitting the deaths among children up to fifteen years and adults after sixty, it finds it causes about a quarter of all deaths, so that its ravages are most deadly at a period when the life of an individual is most useful. The death roll from tuberculosis in Canada has exceeded nine thousand every year for the past three or four years. In the United States it has exceeded one hundred thousand, truly a terrible showing, when one knows, as we now know, that consumption can be prevented.

It has been proved beyond doubt that a living germ called the tubercle bacillus is the cause, and the only cause, of tuberculosis. When these germs find their way into the body they multiply there; if conditions are favourable for their growth, they produce new growths or nodules (tubercles) which tend to soften. The discharges from the softened tubercles, containing the living germs, are thrown off from the body in various ways. In pulmonary tuberculosis the discharges contain the germs, often in enormous numbers. It has been proved that in the course of twenty-four hours, many millions of tubercle bacilli may be discharged under certain conditions by one person suffering from tuberculosis. The germs thus thrown off do not grow outside the living body except under artificial conditions, but they may and often do retain their vitality and virulence for long periods. As tuberculosis can only result from the action of these germs, it follows, from what has been said, that when the disease is acquired it must be acquired from receiving into the body the living germs that have come from some other human being or animal affected with the disease, in other words, it cannot occur except by *direct communication* from some other individual or animal suffering from tuberculosis. While the meat and milk of tubercular cattle may be important sources of danger, yet the disease as a rule is acquired through its communication direct from man to man.

The expectoration of tubercular persons frequently lodges in places where it afterwards dries, as on handkerchiefs, clothing, carpets, floors, sidewalks or vehicles. After drying, it is very apt in one way or another to become pulverised, and then, by means of wind, trailing skirts or other causes, it floats in the air as dust.

Pulmonary tuberculosis is usually produced by breathing air in which the living germs are suspended as dust or attached to dust; such dust may retain for weeks, or even months, or longer, its power of causing the disease. It should be distinctly understood that the element of danger is the dried and pulverised sputum, and *not* the breath of tubercular patients or the moist sputum received into proper cups. The breath and moist sputum are practically free from danger, because the germs are not dislodged from the moist surface. The act of coughing or speaking may expel particles containing infective matter. If all discharges were destroyed at the time of their exit, by far the greatest danger of communication from man to man would be removed.

It is a well-known fact that some persons, and especially the members of some families, are particularly liable to tuberculosis. So marked and so frequent is the development of the disease in certain families that the affection has long been considered hereditary. We now know that the disease itself is not hereditary, but that there is inherited certain constitutional weaknesses which render the individual a more easy prey to the germs, once they have gained an entrance.

Where the parents are affected with tuberculosis, the children, from the earliest moment of life, are exposed to the disease under the most favourable conditions for its transmission; for not only is the dust of the house likely to contain the bacilli, but the relation between parents and children, especially between mother and child, are of that close and intimate nature especially favourable for transmission by direct contact.

The frequent occurrence of several cases of consumption in a family is, then, not to be explained on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission direct from some other individual.

It follows, from what has been said, that tuberculosis is a *communicable* disease and, further, that it is *preventable*. If it is preventable, the natural question to ask is: Why is it not prevented? It is not prevented because of the indifference of the public. It is difficult to root out old ideas, and it is still more difficult to get a people to adopt precautions against an evil which, although so fatal in its ultimate results, does not strike the public mind with the startling suddenness effected by the appearance of cholera, small-pox or diphtheria. If our fashionable dames, heads of families, institutions and industrial concerns, together with the poor consumptive, would all do their duty to their neighbours, the spectre of tuberculosis would gradually disappear, and with it much suffering and misery.

To sum up, then, we find the following as accepted facts:—

1. Consumption is caused *only* by a germ which comes from the living, affected with consumption.
2. Consumption is preventable, because, for practical purposes, the great source of infection—the spit—can be easily disinfected or destroyed. Remove the spit or sputum as a source of infection, and consumption must go far towards disappearing.
3. Consumption is not hereditary, nor is it easily contracted if reasonable care be taken.
4. The careless consumptive patient is a focus of infection and a danger to all persons who come much in proximity to him or visit the places he frequents.

I beg to append suggestions which, if strictly followed, will materially aid towards stamping out consumption.

SANITORIA.

The open-air treatment of consumptives and those who are threatened with tuberculous disease has given much better results than any other. The earlier the treatment is begun the more likely is there to be a favourable result. Open-air treatment, excellent though it may be, is not enough; the exercise and the food are necessary adjuncts and each must be under expert supervision. Therefore, sanatorium treatment is almost a necessity.

Sanatoria, like ordinary hospitals, although they may be endowed by the Government, must principally look to the public for support. I am convinced we have in British Columbia a climate as favourable to the successful treatment of consumption as any in the world, still we are without a sanatorium. I hope this will soon be remedied.

RULES FOR PATIENT.

Two facts should encourage the patient:—

1. That there is always an intrinsic tendency to recovery in the earlier stages of the disease, and that, under modern treatment, a large percentage of cases do recover.
2. That there is no reason for any person to think that he is doomed by heredity, no matter what his family history may be.

Disposal of Sputum:—

(a.) Pressed paper spit cups, costing but little, are on the market (Henderson Bros., Victoria and Vancouver). One or several can be used daily, and after it has been used, each cup with cover and contents can be burned.

(b.) Paper cups held in a metal frame may be used.

(c.) Metal or porcelain spit cups or spittoons, each containing a small quantity of disinfecting solution, 1, 2 or 3, may be used.

It must be remembered that the disinfecting fluid cannot thoroughly disinfect, because it cannot reach all parts of the sputum.

The final disposal of the sputum may be :—

1. By cremation when possible.
2. Pouring down water closet when sewer connection obtains.
3. Fill spittoon or cup with *boiling* water, cover and let stand till cool.

4. By setting cup or spittoon aside, preferably in a warm place, so that the disinfectant may act eight or twelve hours longer. In such case the quantity of disinfecting solution should be in excess of that of the sputum ; then bury or otherwise dispose of it so that flies or any domestic animals cannot reach it. Wash cup or spittoon in *boiling* water, and then with soap and water, or, preferably, put into water and boil for some time (boiling water will kill consumptive germs almost immediately, but it would be safer to boil for ten minutes, so that sputum may be disintegrated and exposed to the heat). The patient should have two spit cups for alternate use. A cover should exclude flies. Cleaning can be done with washing soda and boiling water, or soap and hot water.

5. When away from his home, the patient may spit into Japanese paper napkins or paper handkerchiefs (Henderson Bros. have supply). After one use it must be put in rubber tobacco pouch until it can be burned, or, preferably, burned at once.

6. Spitting into handkerchiefs should be avoided. If forced to do this, the handkerchief should be boiled before the sputum dries. Handkerchiefs upon which the sputum is allowed to dry surround the user and his friends with infection, infect the pocket and everything else they touch, and lessen the patient's chances of recovering (it must be borne in mind that an infected person can be re-infected many times, and so hasten the end).

After coughing or spitting, the lips should not be wiped with the handkerchief used for the nose. The lips should be wiped with paper napkins, to be burned at once or folded up, so that the contact side is within, and treated as if it contained the sputum.

Repress cough as much as possible ; cough gently with mouth closed as much as possible, or hold paper napkin before mouth and then treat it as infected. Never swallow the sputum ; by so doing you favour the extension of the disease to the intestinal tract.

Do not soil personal or bed clothing with the sputum, nor the hands when avoidable ; disinfect at once when such occurs in solution 1, 2 or 3.

Male patients who wear a moustache or beard should keep it closely clipped, and should disinfect with solution immediately on soiling ; wash hands and lips frequently.

Do not infect immediate surroundings of home, or spit upon grass or hay, or anywhere else where sputum can be eaten by cattle or other animals or chickens.

Finally, let the patient ever remember that filth, foul air and darkness are the friends of the germs, that sunlight, fresh air and cleanliness are their worst enemies.

RULES FOR ATTENDANTS.

The floors, woodwork and furniture of rooms in which consumptive patients stay should be wiped with a damp cloth, not dusted or swept in the dry way.

Clothing may be disinfected by boiling. Rooms may be disinfected with formaldehyde fumigation (large doses), supplemented with the washing of floor and woodwork with solution 5. This should be done every few weeks when practicable, while the rooms are occupied by the patient. If the floor or other surfaces are accidentally soiled with sputum, the spots should be wet and rubbed thoroughly with solutions 5 or 1, 2 or 3.

Rooms for consumptives should not have fixed carpets. A few rugs may replace them ; these should be frequently carried to the open air and exposed to the action of direct sunshine for several hours at a time. For thorough disinfection of them, steam is the best. The table-ware of the patient, the knife, fork, cup, and particularly spoons, should be kept separate and washed by themselves in scalding water.

In addition to the danger from infectious dust, if it is allowed to be diffused through the air, there are other possible ways of communicating the infection : it may be carried directly to the mouth by the fingers, or indirectly by handling articles of food. After soiling the hands, cleanse them carefully and disinfect in solution 1, 2 or 3. Guard against inoculating cuts or abrasions with sputum.

RULES FOR EVERYBODY.

(a.) Anything tending to lower the tone of the general health may act as a predisposing cause—insufficient nourishment, overwork, loss of sleep, worry, close and dusty air. Avoid these. Give sleeping rooms a prolonged airing and sunning during the day, and as much night ventilation as is practicable. The dwelling-place should be dry naturally or made so

artificially. If it is thought that there is a family predisposition to consumption, an out-door occupation should be chosen. Live in the open air and sunshine as much as possible.

(b.) Every new case of tuberculosis comes from some earlier case. The germs of this disease retain their vitality and their infectivity a long time under favourable conditions. Therefore, do not bring into your house clothing formerly used by consumptives, unless it has been thoroughly disinfected; do not allow your wives and daughters to risk infecting your home with dresses that have wiped up the sidewalks. Do not move into an infected house or rooms until the thoroughness of the disinfection is unquestionable; do not put to your lips or mouth, pipes, wind instruments, money, or anything else that has been used or handled by consumptives. Do not buy bread, milk or other articles of food not to be cooked, from consumptives. Kissing, particularly lip to lip, is unsafe, if one party is tuberculous.

By observing the rules which are expressed and suggested in the foregoing, the principal, if not all danger of infection may be avoided.

DISINFECTING SOLUTIONS.

Solution 1.

Carbolic acid (pure liquified)	7 ounces.
Water	1 gallon.
	Mix.

This is about a five per cent. solution.

Solution 2.

Lysol	5 ounces.
Water	1 gallon.
	Mix.

Many colours are changed by this solution.

Solution 3.

Solutol (cresol in an excess of sodium cresote)	$\frac{1}{2}$ pint.
Water	$\frac{2}{2}$ gallons.
	Mix.

This is a very efficient disinfectant for excreta, tuberculous sputum, etc.

Solution 4.

Formalin	6 ounces.
Water	1 gallon.
	Mix.

This mixture contains a little less than two per cent. of formaldehyde.

Solution 5.

Corrosive sublimate	60 grains.
Water	1 gallon.
	Mix.

Label "poison." This is about one in a thousand solution; should only be used for wood-work; destroys metal and gilding; must be kept in wood, glass or earthenware. This is about the best of all disinfectants, but is unsuitable for tuberculous sputum as it coagulates albuminous matter.

It is a good plan to dissolve four or five tablespoonfuls of common salt in each quart of solution 1 and 2, thereby increasing considerably the disinfecting power of the solution.

Steam:—

Steam disinfection can be carried out on a small scale in the common tin wash boiler, by supporting a false bottom or floor of laths or thin boards above the water with two bricks, or otherwise. One hour steaming is necessary.

NOTE.—The Attorney-General directs me to announce that the Government Bacteriological Laboratory is at the disposal of all sufferers. Therefore, persons suspected to be suffering from tuberculosis can have their sputum examined at the laboratory free of charge. The early morning sputum should be sent in small, wide-necked, clean, dry bottles, and well corked, together with a full history of the case. It is preferable to act through your doctor.

CHARLES J. FAGAN,
Secretary.

Victoria, November 26th, 1901.



PROVINCIAL BOARD OF HEALTH, BRITISH COLUMBIA.

RE TUBERCULOSIS.

Regulations of the Provincial Board of Health, approved by His Honour the Lieutenant-Governor in Council, dated November 14th, 1901.

Whereas tuberculosis is now proved to be infectious, and is at the present time existing in many parts of the Province, the Provincial Board of Health enacts the following regulations:—

NOTIFICATION.

1. Whenever any physician knows or suspects that any person whom he is called upon to visit is infected with or has died of tuberculosis, he shall immediately notify the Medical Health Officer, and give an account of the condition of patient and state what precautions are being taken to prevent infection.
2. Whenever any householder knows or suspects that any person within his family or household has tuberculosis, he shall immediately give notice to the Medical Health Officer.
3. Whenever any teacher in any school has reason to suspect that any pupil is suffering from tuberculosis, he shall notify the Medical Health Officer immediately, and may prevent the attendance of such pupil until medical evidence is produced that such pupil is not suffering from tuberculosis, or any form likely to be infectious.
4. Whenever any Superintendent, or person in charge of any hospital—public or private—asylum, gaol, orphanage, “home,” convent, or private school, knows or suspects that any inmate of such hospital, asylum, gaol, orphanage, “home,” convent, or private school, is suffering from tuberculosis in any form, he shall immediately notify the Medical Health Officer.
5. In Municipalities or Districts where no Medical Health Officer has been appointed, notification should be sent to the Secretary of the Provincial Board of Health.

MEDICAL HEALTH OFFICER.

6. “Medical Health Officer” shall mean and include the Medical Health Officer appointed under the provisions of the “Health Act,” to act within the limits of the jurisdiction of any Local Board or Health District.
7. The Medical Health Officer shall, within forty-eight hours, give notice in writing to the Secretary of the Provincial Board of Health of every case of tuberculosis reported to him, and shall state as nearly as possible the condition of patient, and what precautions are being taken to prevent infection.
8. In case the Medical Health Officer is not satisfied with the report of the physician in charge, he may demand a fuller report, and in the event of his still being dissatisfied he shall visit the patient and satisfy himself that all necessary precautions are being carried out.
9. In case where the Medical Health Officer and attending physician disagree as to precautionary measures, the matter shall be referred to the Provincial Board of Health for final settlement.

10. Whenever a case is reported as not being under the charge of a physician the Medical Health Officer shall forthwith visit such case and instruct the patient as to necessary precautions against general and self infection.

11. Whenever the Medical Health Officer or the physician in charge considers that a house or any part of a house is infected with tuberculosis, he shall order said house or part of house to be disinfected, in accordance with instructions issued by the Provincial Board of Health.

12. In all cases of death from tuberculosis the rooms or house occupied by deceased shall be disinfected to the satisfaction of the Medical Health Officer, or the Secretary of the Provincial Board of Health or his deputy.

13. Whenever a case of tuberculosis is reported from a hotel or boarding-house, the Medical Health Officer shall visit the patient while residing in said hotel or boarding-house once a week, or as often as the Secretary of the Provincial Board of Health may direct.

SPITTING IS PUBLIC.

14. Inasmuch as spitting is purely a matter of habit, and is offensive to many, and is often very harmful and a fruitful means of carrying disease, it is hereby declared unlawful to spit in tram-cars, railway cars, or other public conveyances, or on sidewalks, or on floors and other parts of public buildings.

TUBERCULOUS MILK.

15. Inasmuch as tuberculous milk is a most fruitful source of consumption, it is hereby declared unlawful for any person to sell milk unless he has a certificate, of a date not later than six months, from the Provincial Veterinary Surgeon that the cows from which such milk comes are free from tuberculosis. Such certificate may be demanded by any customer, or Medical Health Officer, Sanitary Inspector, Secretary of the Provincial Board of Health or his deputy.

DISINFECTION.

16. Whenever it appears necessary or advisable to the Medical Health Officer to have any house, hotel, boarding-house, hall, theatre, car, railway car or other public conveyances disinfected, he may order same to be done and at the expense of the owners.

PENALTIES.

17. Any person who violates any provision of these regulations shall be liable, upon summary conviction before any Police or Stipendiary Magistrate, or before any two Justices of the Peace, for every such offence, to a fine not exceeding one hundred dollars, with or without costs, or to imprisonment, with or without hard labour, for a term not exceeding six months, or to both fine and imprisonment in the discretion of the convicting Court.

CHARLES J. FAGAN,
Secretary

VICTORIA, B.C. :

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